

## REFERENCES

- ALI, S. (1964): The Book of Indian Birds. Bombay Natural History Society, Bombay.
- & FUTEHALLY, L. (1967): Common Birds. National Book Trust, India, New Delhi.
- LAMBA, B. S. (1952): Birds of Hoshiarpur. *M.Sc. Thesis Punjab Univ.*, Hoshiarpur.
- SEKHON, S. S. (1966): Studies on the nidification, behaviour and damage by sparrows and parrots in Punjab. *M.Sc. Thesis Punjab Agric. Univ.*, Ludhiana.
- WHISTLER, H. (1949): Popular Handbook of Indian Birds. Oliver and Boyd, Edinburgh and London.

### 10. SIGNIFICANCE OF COMMUNAL ROOSTING IN THE COMMON MYNA [*ACRIDOTHERES TRISTIS* (LINN.)]

Although some species roost alone, in pairs or small groups, there are numerous cases in which hundreds or thousands of birds gather at a communal roosting place both during and after the breeding season. Yet till recently very little attention has been paid to explaining the function of this phenomenon in bird life. This paper summarises the result of relevant observations on the Common Myna.

The Common Myna, a black-headed vinous-brown bird about 18 cm long, is one of the most familiar species in India. It occurs in close association with man and can be found wherever man normally lives, except in high mountains, sandy desert and dense forest. It is basically an insectivorous bird but due to its association with man it is omnivorous. It roosts communally on trees in enormous flocks throughout the year.

Berhampore, a district town, is situated on the eastern side of the Bhagirathi river in the midlands of West Bengal. The eastern bank of the river is lined for about half a mile with double rows of densely growing heavily spinous babul (*Acacia arabica*) trees. A large number of tall trees like sisu (*Dalbergia sissoo*), mango (*Mangifera indica*), banyan (*Ficus benghalensis*) and peepal (*Ficus religiosa*), etc. are scattered all over the town. During the course of my study on the life of the Common Myna (Sengupta, 1969, *Proc. Zool. Soc. Calcutta* 22 : 129-137) I found that the babul trees formed the only roosting place of the Common Myna in Berhampore (area : ten square miles) although many other suitable roosting trees were abundant. As the shadow lengthened, party after party arrived from all directions and settled for the night to the accompaniment of a great deal of cacophony.

Chuchura is also a district town at a distance of 40 km away from Calcutta and is situated on the western bank of the Hooghly river. The town encompasses 6 square km and contains a large number of tall trees like banyan, mango, peepul. At Chuchura I have found only two roosting sites. The largest roosting congregation of the Common Myna is, however, on a tall banyan tree standing very close to the Chuchura

Railway Station. This railway station is situated on the outskirts of the town where the human population is very scanty. The other roosting site at Chuchura is a banyan tree standing on the bank of the Hooghly river on the eastern boundary of the town.

Sinthi is a densely populated suburb of Calcutta (population : 50,000) with large trees (coconut, banyan, mango and peepul, etc.) scattered all over the area. Here the Common Myna can be seen in abundance from dawn to dusk feeding solitarily most of the feeding time on the household refuse. But at dusk the birds leave the area to roost on trees on the outskirts of Sinthi.

Santiniketan is a university town in the district of Birbhum, West Bengal. Here I have found only one roosting site of the Common Myna ; a clump of bamboo (*Bambusa* sp.) growing inside a walled graveyard at the southern boundary of the university campus (area : c. 6 square km).

It is therefore, clear that the preferred roosting on babul trees above all others at Berhampore, on a banyan tree on the outskirts of Chuchura, and on bamboo in a secluded graveyard at Santiniketan is because these sites are relatively undisturbed.

At Berhampore construction of a bridge over the Bhagirathi river near the rows of the babul trees was started in the early part of June 1963. Soon tents and huts were installed to house a large number of people who were connected with the construction of the bridge on the river bank close to the rows of babul trees. Work continued all through the day and night. At first I observed a sudden awakening of the Common Myna accompanied with puffing of body feathers and loud calls at intervals during the night. This behaviour was noticed till the last week of June 1963 when one evening I found three or four mynas had taken to roosting on a banyan tree about 300 metres away from the bank of the river towards the town. Within a week that banyan tree was heavily crowded with roosting mynas. Around the middle of July 1963 there were no mynas roosting either among the babul trees or on the banyan tree. I searched for their new roosting site within the town but without success. I left Berhampore in September 1967 when the bridge was still under construction. Later I learnt that the bridge was completed in the early part of 1969 and the river bank reverted to the previous undisturbed condition around July 1970. On February 10, 1971, I happened to pay a visit to Berhampore and made a trip to the Bhagirathi river. To my surprise I found a large congregation of the mynas on the rows of babul trees as before. I presume that this was due to the return of undisturbed and safe conditions on the river bank, though I was not sure if these were the same birds that had roosted on the babul trees earlier.

It appears, therefore, that selection of the roosting site in the Common Myna is dependent on protection against predators and distur-

bance by man. It was found in all the abovementioned places that at dawn the mynas leave their roost and disperse for foraging far and near. Several ringed mynas were found feeding 3 km away from the roost site. Mynas feed individually in populated town areas and in small parties of four to eight in the countryside yet roost communally. This habit is also found in many other birds. However, where plentiful food is available considerable congregations of mynas are found. This also happens after a moderate shower, especially in the countryside when insects come out from their hideouts. Therefore, in the Common Myna the feeding pattern (i.e. gregarious, or individual) is determined by the amount of food available in a particular area. Since the Common Myna is omnivorous its food source is not localised in patches, as for instance in granivorous birds, but is generally distributed. Hence Ward's (1965, *Ibis*, 107 : 173-214) contention that communal roosting helps birds to find patchy food source seems untenable in the case of a semi-domesticated omnivorous bird species with an unlocalized food source. Siegfried (1970, *Proc. XV Int. Ornith. Cong.* : 197) and Zahavi (1971, *Ibis*, 113 : 107-109) while discussing the communal roosting in *Ardeola ibis* and in *Motacilla a. alba* respectively have also suggested its origin in relation to food supply. Zahavi's (loc. cit.) contention that a species feeding individually cannot have communal roosting also seems untenable in a species like the Common Myna which feeds both individually and gregariously yet roosts communally. Simmon (1965, *Brit. Birds* 85 : 161-168) has also found some solitary feeders to roost communally. Therefore, the relationship between feeding habit and communal roosting as postulated by Siegfried and Zahavi (loc. cit.) cannot be applicable to all bird species especially whose food source is not patchy like the mynas. The position and pattern of the roost sites of the Common Myna suggest that communal roosting behaviour may have evolved through natural selection primarily as an antipredator adaptation leading to the survival of the species thus supporting the view expressed by Lack, 1968, THE ECOLOGICAL ADAPTATION FOR BREEDING IN BIRDS.

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